

# P-2024

## VoIP Analog Telephone Adaptor

### **Quick Start Guide**

Version 3.60

7/2007

Edition 1

#### **DEFAULT LOGIN**

IP Address <http://192.168.5.1>

Password 1234

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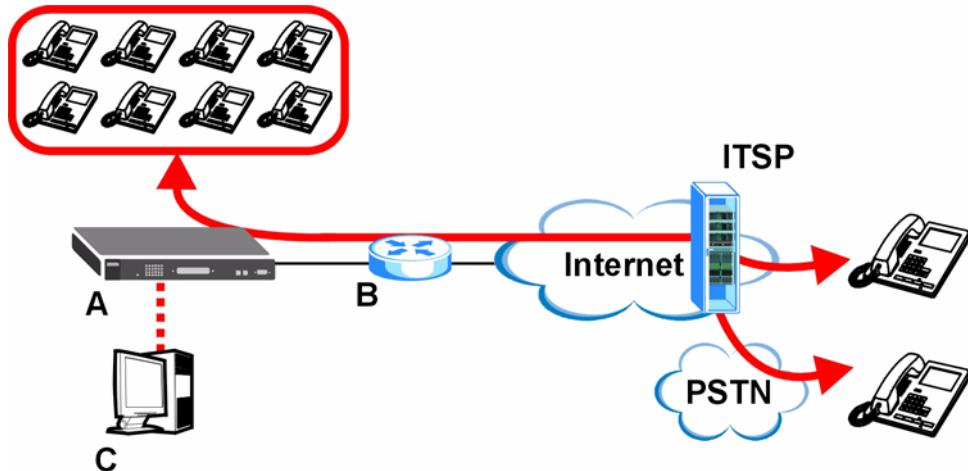
**ZyXEL**

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## Overview

Use your P-2024 to make Voice over IP calls using analog phones. Connect analog telephones to the P-2024, and map each phone port to one or more of the configurable VoIP (SIP) accounts.

The following figure shows your P-2024 (labeled **A**) allowing analog telephones to make and receive calls over the Internet via a network router (B). The ITSP (Internet Telephony Service Provider) routes calls to and from other VoIP accounts and also PSTN (Public Switched Telephone Network) lines. **C** is a computer you connect to the P-2024 for initial configuration.



This Quick Start Guide shows you how to set up and use the P-2024 by doing the following things:

- [Installing the Hardware](#)
- [Making Hardware Connections](#)
- [Accessing the Web Configurator](#)
- [Configuring Network Settings](#)
- [Setting Up A SIP Account](#)
- [Setting Up a Telephone and Making a Call](#)

The following table lists some important information about the P-2024.

Default web configurator password	1234
Default LAN IP address	Static: 192.168.5.1
Default WAN IP address	Dynamic: assigned via DHCP
Number of analog telephone connections	24
Number of configurable SIP accounts	24
Default SIP port numbers (SIP local port, SIP server port, SIP register server port)	5060

## 1 Installing the Hardware

Either:

- Attach the included self-adhesive rubber feet (for free-standing installation)

or

- Attach the included brackets and mount the P-2024 in a rack



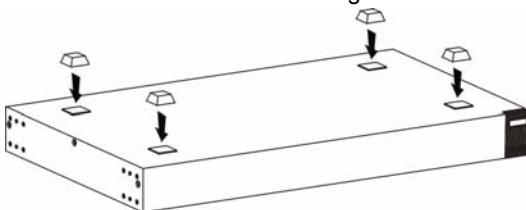
**For proper ventilation, allow at least 4 inches (10 cm) of clearance at the front and 3.4 inches (8 cm) at the back of the P-2024. Leave space between devices if stacking.**

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### 1.1 Free-Standing Installation

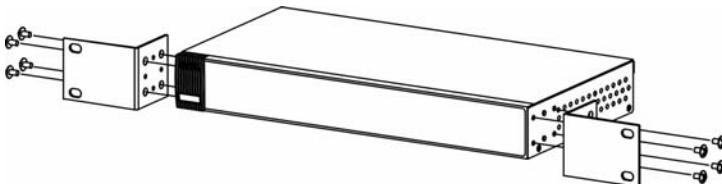
**1** Set the switch on a smooth, level surface.

**2** If your P-2024 comes with unattached rubber feet, attach them to each corner on the bottom of the device. These rubber feet help protect the P-2024 from shock or vibration and ensure space between devices when stacking.

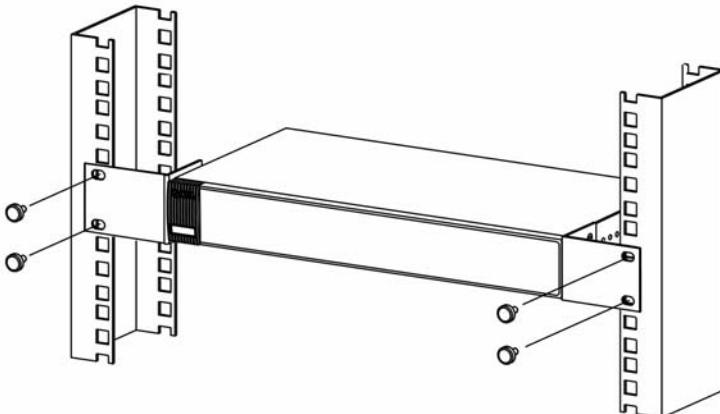


## 1.2 Rack-Mounted Installation

- 1 Align one bracket with the holes on one side of the P-2024 and secure it with bracket screws smaller than the rack-mounting screws. Attach the other bracket to the other side of the P-2024.

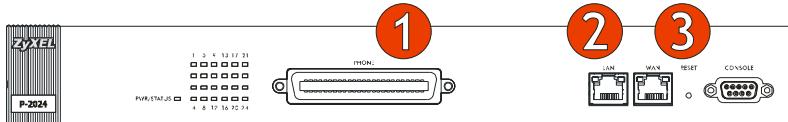


- 2 After attaching both mounting brackets, position the switch in the rack by lining up the holes in the brackets with the appropriate holes on the rack. Secure the switch to the rack with the rack-mounting screws.



## 2 Making Hardware Connections

This section describes how to connect the P-2024 to your network and prepare it for configuration.



Take the following steps to connect the P-2024 to your network:

**1** Connect the Telco-50 (RJ-21) cable to the **PHONE** connector and tighten the retaining screw.

See [Section 2](#) on page [4](#) for information on configuring and using the Telco-50 cable to connect the P-2024 to your telephones or a Main Distribution Frame (MDF).

**2** Use an Ethernet cable to connect your computer to the **LAN** port.

**3** Use another Ethernet cable to connect your switch or router to the **WAN** port.

**4** Connect a suitable power source to the **AC INPUT** power socket using the included power cable. Turn on the power.

**5** Look at the LEDs on the P-2024.

The **1 ~ 24** analog phone port LEDs flash during startup. Once the P-2024 has started up successfully:

- If an analog phone is connected to a port, the port's LED blinks when the phone is off-hook.
- If an analog phone port has a registered SIP account assigned to it, the port's LED stays steady on. The LED blinks when a call is incoming on the SIP account, even if no phone is connected.

The **PWR/STATUS** LED turns steady on when the P-2024 has started up successfully.

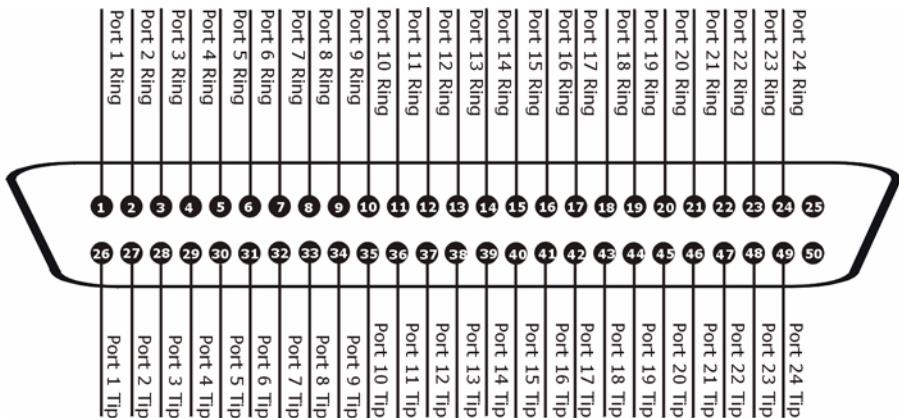
The **LAN** and **WAN** LEDs turn on when they are connected, and blink when there is traffic. A green LED indicates that the connection is at 10Mbps, and a yellow LED indicates that the connection is at 100Mbps.



If the **PWR/STATUS** LED does not turn on, check the P-2024's power connection. If the **LAN** or **WAN** LED does not turn on, ensure that the device to which it is connected is working correctly.

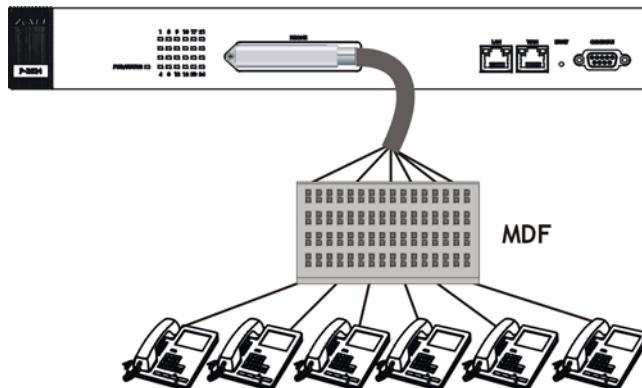
## 2.1 Using the Telco-50 Cable

You need to use a Telco-50 cable with exactly the following pin assignments.

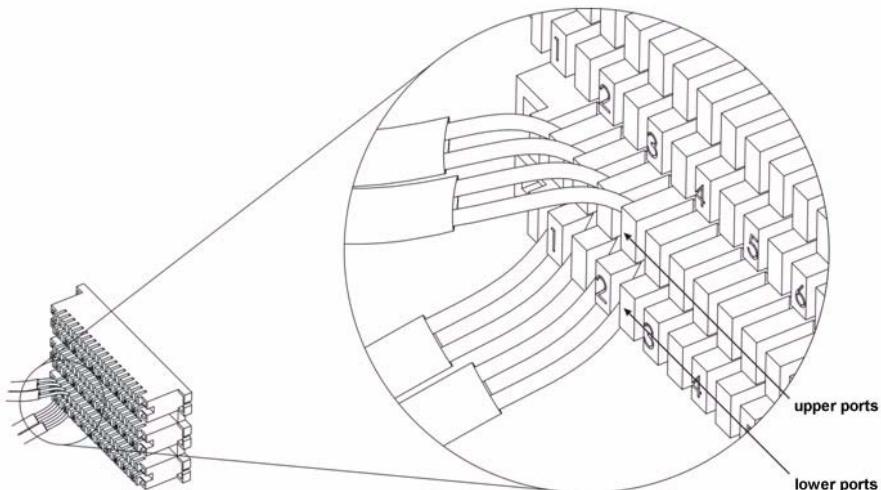


TELCO-50 CABLE CONNECTOR (MALE)

You can either connect telephones directly to the P-2024 using the RJ-11 connectors on the Telco-50 cable, or use an MDF (Main Distribution Frame), as shown in the following figure.



If you use an MDF, attach the wires from the P-2024's Telco-50 cable to the upper ports (use a punch-down tool) and attach the wires from the telephones to the lower ports, as shown.



## 3 Accessing the Web Configurator

### 3.1 Setting Your Computer's IP Address

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Make a note of your computer's IP settings before you change them.

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In order to configure your P-2024 through the LAN port, you need to set your computer's IP address to be in the same subnet as the P-2024.

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The P-2024's LAN port IP address (default) is **192.168.5.1**.

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Give your computer an IP address in the range 192.168.5.2 ~ 192.168.5.254 with a subnet mask of 255.255.255.0.

See your User's Guide for information on changing your computer's IP address.

### 3.2 Logging Into the Web Configurator

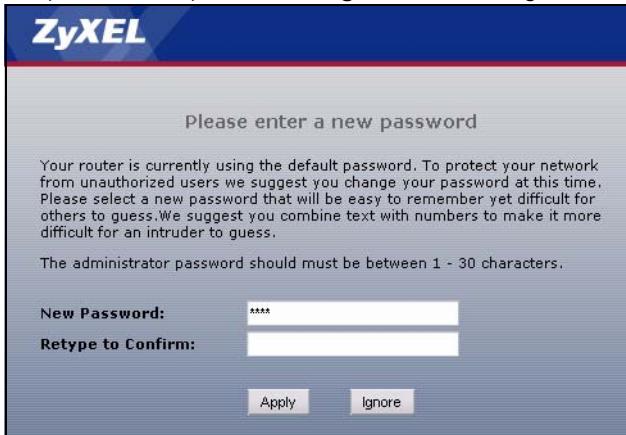
Open your Web browser and enter the P-2024's LAN IP address (default 192.168.5.1) in the address bar. The following screen displays.

The screenshot shows the login interface for the ZyXEL P-2024 router. At the top, the brand name "ZyXEL" is displayed. Below it, the model "P-2024" is shown. The main heading reads "Welcome to your router Configuration Interface". A sub-instruction says "Enter your password and click "Login"". There is a "Password:" field containing "\*\*\*\*\*" and a note stating "( max. 30 alphanumeric, printable characters and no spaces )". A "Note:" section contains the instruction "Please turn on the Javascript and ActiveX control setting on Internet Explorer when operating system is Windows XP and service pack is SP2.". At the bottom are two buttons: "Login" and "Reset".



If you do not see this screen, check your connections and ensure that one of the P-2024's **LAN** LEDs is on. Check that your computer is using a static IP address in the range 192.168.5.2 ~ 192.168.5.254 with a subnet mask of 255.255.255.0 (default).

Enter the password (default 1234) and click **Login**. The following screen displays.



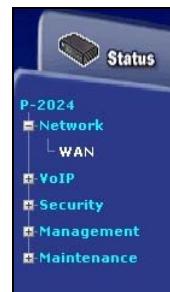
It is strongly recommended that you change the P-2024's password. Enter (and re-enter) the new password and click **Apply**. Alternatively, click **Ignore**.

The **Status** screen displays.

## 4 Configuring Network Settings

Next, take the following steps to set up the P-2024's WAN IP address.

- 1 In the navigation panel on the left of the screen, click **Network > WAN**.



**2** The **Internet Connection** screen appears. Select the **Encapsulation** you were given to use for Internet access.

**3** If you select **PPPoE** (Point-to-Point Protocol over Ethernet) in the **Encapsulation** field, enter your **Service Name** (if you have one), your **User Name**, and enter (and re-enter) your **Password** in the fields that appear.

**4** By default, the P-2024 gets its WAN IP address automatically via DHCP. If you were given a specific IP address to use, select **Use Fixed IP Address**. Fill in the **IP Address**, **IP Subnet Mask** and **Gateway IP Address** fields.

Click **Apply** when you have finished.

**5** If you were given details of DNS (Domain Name System) servers you want to use, click the **Advanced** tab at the top of the screen. Select **User-Defined** from the **First DNS Server** list and enter the server's IP address.

Repeat this for the **Second** and **Third DNS Server** fields if you have the details of backup servers. If you do not have these details, select **None** from the list for each field.

Click **Apply** when you have finished.

**6** Click the **Status** icon in the navigation panel.

The **Status** screen displays. Check that the **WAN Information** settings in the **Device Information** section are correct.

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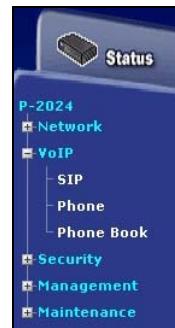


If you configured the P-2024 to get a WAN IP address automatically and the **WAN Information** fields are blank, ensure that one of the P-2024's **WAN** port LEDs is on. Check that the DHCP server is available (ping its IP address from a computer on the network).

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## 5 Setting Up A SIP Account

Next, take the following steps to configure a SIP account on the P-2024.

**1** In the navigation panel on the left of the screen, click **VoIP > SIP**.

**2** The **SIP Settings** screen displays. Select the **SIP Account** you want to set up (this example uses the **SIP 1** account).

Ensure that **Active SIP Account** is selected. Enter the account information provided by your ITSP in the relevant fields.

The screenshot shows the 'SIP Settings' screen with the 'SIP Account' dropdown set to 'SIP1'. Under the 'SIP Settings' tab, the 'Active SIP Account' checkbox is checked. The following fields are populated:

Number	1234
SIP Local Port	5060 (1025-65535)
SIP Server Address	1.2.3.4
SIP Server Port	5060 (1-65535)
REGISTER Server Address	1.2.3.4
REGISTER Server Port	5060 (1-65535)
SIP Service Domain	1.2.3.4

Under the 'Authentication' tab, the 'User Name' field contains '12334' and the 'Password' field contains '\*\*\*\*'. At the bottom, there are 'Apply', 'Reset', 'Advanced Setup', and 'APPLY to ALL SIP' buttons.

- If you do not have information for the **Register Server Address** or **Register Server Port** fields, use the same information you entered in the **SIP Server Address** and **SIP Server Port** fields.
- If you do not have information for the **SIP Service Domain** field, use the same information you entered in the **SIP Server Address** field.
- If you do not have information for any of the other fields in this screen, leave them at their default settings.

**3** Click **Apply** when you are finished.

**4** Look at the P-2024's LEDs. Analog phone port **1**'s LED turns on.

**5** Click the **Status** icon in the navigation panel. The **Status** screen displays.

**6** Scroll down the screen.

Click the **VoIP Status** tab. Check that the **Registration** field for **SIP 1** displays **On Register** and that the **URI** shows the correct SIP account information.

The screenshot shows the 'VoIP Status' screen with the 'VoIP Mapping' tab selected. A table displays account information:

Account	Registration	URI
SIP 1	UnRegister	On Register 1234@1.2.3.4

If you press the **Unregister** button, the SIP account is deactivated. DO NOT do this if you want to use the account.



If the SIP account does not register (**Not Register** displays in the Registration field and/or the analog phone port 1 LED does not turn on) check your WAN settings and re-enter the SIP account information. If this does not help, see **Troubleshooting** in your User's Guide or contact your SIP service provider.

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If you want to set up more SIP accounts, follow the steps above selecting a different SIP Account in the **VoIP > SIP > SIP Settings** screen.

# 6 Setting Up a Telephone and Making a Call

Take the following steps to configure a specific analog telephone to use the SIP account you set up for incoming and outgoing calls.

## 6.1 Setting Up a Telephone

- 1 Connect an analog telephone to the phone port you want to use via the Telco-50 cable. This example uses analog phone port 1.



By default a phone port on the P-2024 uses the SIP account with the same number. For example, the **Phone15** port uses the **SIP 15** account by default.

- 2 Click **VoIP > Phone** in the navigation panel on the left of the screen. The **Analog Phone** screen displays. This screen allows you to specify which SIP accounts you want each phone port to use.

- 3 Select the telephone port that you want to configure from the **Phone Port Settings** list.

In the **Outgoing Call Use** section, select **SIP1**. In the **Incoming Call Apply To** section, also select **SIP1**.

- 4 Click **Apply**.

Outgoing Call Use			
<input checked="" type="checkbox"/> SIP1	<input type="checkbox"/> SIP2	<input type="checkbox"/> SIP3	<input type="checkbox"/> SIP4
<input type="checkbox"/> SIP5	<input type="checkbox"/> SIP6	<input type="checkbox"/> SIP7	<input type="checkbox"/> SIP8
<input type="checkbox"/> SIP9	<input type="checkbox"/> SIP10	<input type="checkbox"/> SIP11	<input type="checkbox"/> SIP12
<input type="checkbox"/> SIP13	<input type="checkbox"/> SIP14	<input type="checkbox"/> SIP15	<input type="checkbox"/> SIP16
<input type="checkbox"/> SIP17	<input type="checkbox"/> SIP18	<input type="checkbox"/> SIP19	<input type="checkbox"/> SIP20
<input type="checkbox"/> SIP21	<input type="checkbox"/> SIP22	<input type="checkbox"/> SIP23	<input type="checkbox"/> SIP24

Incoming Call apply to			
<input checked="" type="checkbox"/> SIP1	<input type="checkbox"/> SIP2	<input type="checkbox"/> SIP3	<input type="checkbox"/> SIP4
<input type="checkbox"/> SIP5	<input type="checkbox"/> SIP6	<input type="checkbox"/> SIP7	<input type="checkbox"/> SIP8
<input type="checkbox"/> SIP9	<input type="checkbox"/> SIP10	<input type="checkbox"/> SIP11	<input type="checkbox"/> SIP12
<input type="checkbox"/> SIP13	<input type="checkbox"/> SIP14	<input type="checkbox"/> SIP15	<input type="checkbox"/> SIP16
<input type="checkbox"/> SIP17	<input type="checkbox"/> SIP18	<input type="checkbox"/> SIP19	<input type="checkbox"/> SIP20
<input type="checkbox"/> SIP21	<input type="checkbox"/> SIP22	<input type="checkbox"/> SIP23	<input type="checkbox"/> SIP24

**Apply**    **Reset**    **Advanced Setup**

If you set a phone port to use more than one SIP account for outgoing calls - for example, if you set **Phone10** to use **SIP9**, **SIP14** and **SIP15** - the following things happen when you make a call for the first time:

- The P-2024 tries to use the lowest-numbered SIP account (**SIP9** in this example).
- If the first SIP account it tries is not registered, the P-2024 tries to use the next-lowest-numbered one (**SIP14** in this example).
- If the SIP account is registered, the P-2024 always uses the account for subsequent calls (if you make another call, the P-2024 does not try to use **SIP9**).
- If the SIP account that the P-2024 is using becomes unregistered, the P-2024 tries each account in numerical order again until it finds a registered account.

If you set a phone port to use more than one SIP account for incoming calls, you cannot tell from which account a call comes when the phone rings.

**5** Click the **Status** icon in the navigation panel.

**6** The **Status** screen displays. Scroll down and click the **VoIP Mapping** tab. Check that the **SIP1** row displays an **Incoming & Outgoing** icon in the **Phone 1** column.

VoIP Status		VoIP Mapping							
Account		1	2	3	4	5	6	7	8
<a href="#">SIP 1</a>									
<a href="#">SIP 2</a>									
<a href="#">SIP 3</a>									



If a icon displays, you can receive incoming calls only. If a icon displays, you can make outgoing calls only. If a icon displays, the SIP account has failed to register.

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## 6.2 Making a Call

- 1 Lift the phone's receiver. If the phone port is correctly configured, you hear a dial tone and the **1** analog phone port LED blinks.
- 2 Dial a number you know can be reached using this SIP account. If the SIP account is correctly configured, the dial tone changes to the ringing tone.



If you experience difficulty using an analog phone when there is another device (such as an MDF) connected between the phone and the P-2024, try connecting the phone directly to the Telco-50 cable jack.

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### Viewing a Product's Certification(s)

- 1 Go to [www.zyxel.com](http://www.zyxel.com).
- 2 Select your product from the drop-down list box on the ZyXEL home page to go to that product's page.
- 3 Select the certification you wish to view from this page.

